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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,147	12/04/2003	Tetsuji Omura	YKI-0142	6736

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EXAMINER	
SANTIAGO, MARICELI	
ART UNIT	**PAPER NUMBER**
2879	

DATE MAILED: 03/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

H/A

Office Action Summary	Application No.	Applicant(s)	
	10/728,147	OMURA ET AL.	
	Examiner	Art Unit	
	Mariceli Santiago	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 December 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4,6,7 and 10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4,7 and 10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

The Amendment, filed on December 12, 2005, has been entered and acknowledged by the Examiner.

Cancellation of claims 2-3, 5, 8-9 and 11 has been entered.

Claims 1, 4, 6, 7 and 10 are pending in the instant application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.
>
> The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1, 4, 7 and 10 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yamada et al. (JP 2000-173766 A).

Regarding claim 1 and 4, Yamada discloses a display apparatus in which display operation is carried out by controlling emission of each pixel arranged in a matrix, the apparatus comprising, an element substrate (1) on which a luminous element is formed for each of the

pixels, a sealing substrate (22) on which a protrusion is formed in a surrounding area thereof (Paragraph [0073]), the protrusion being adhered to the periphery of the element substrate so as to seal an upper space over the element substrate, and a desiccant (33) fixed on an internal surface of the sealing substrate opposed to the element substrate so as to make the upper space located over the element substrate dry, wherein the desiccant consists of an adhesive made of a thermoplastic resin and moisture absorbent grains dispersedly mixed into the adhesive, the moisture absorbent grains are CaO grains having a grain size of 0.1 mμ to 10 mμ (Paragraph [0067]), wherein the thermoplastic resin is an acrylic resin or an epoxy resin (Paragraph [0068]). The Examiner notes that while Yamada discloses when desiccant (33) is used, the sealing substrate having a protrusion is not a preferred embodiment, the reference teaches that any shape, including one with a protrusion, can exemplified the sealing substrate (22, Paragraph [0073]). Yamada fails to state the coefficient of thermal expansion for the CaO grains and the thermoplastic resin being of $5x10^{-6}$ to $25x10^{-6}$, and $100x10^{-6}$ to $200x10^{-6}$, respectively. However, it is understood that the expansion coefficients are specific for each material because the magnitude of the bonding forces are specific, moreover, the thermal expansion is temperature dependent. Yamada discloses the CaO moisture absorbent material with particular particle size, and the thermoplastic resins with particular layer thickness as claimed and/or disclosed by applicant, as such, the thermal properties of the materials are implicitly disclosed by Yamada teachings. Particularly, given that both applicant's disclosure and Yamada teach similar materials, it follows that one skilled in the art would reasonable expect in both cases for the desiccant material components to exhibit similar thermal properties, that is, a coefficient of thermal expansion for the CaO grains and the thermoplastic resin being of $5x10^{-6}$ to $25x10^{-6}$ and $100x10^{-6}$ to $200x10^{-6}$, respectively, for a similar operating temperature range.

Regarding claim 7 and 10, Yamada discloses a desiccant which absorbs moisture consisting of an adhesive of resin (Paragraph [0068]), and moisture absorbent grains dispersedly mixed into the adhesive, wherein the moisture absorbent grains are CaO grains having a grain size of 0.1 mμ to 10 mμ (Paragraph [0067]), wherein the thermoplastic resin is an acrylic resin or an epoxy resin (Paragraph [0068]). Yamada fails to state the coefficient of thermal expansion for the CaO grains and the thermoplastic resin being of $5x10^{-6}$ to $25x10^{-6}$, and $100x10^{-6}$ to $200x10^{-6}$, respectively. However, it is understood that the expansion coefficients are specific for each material because the magnitude of the bonding forces are specific, moreover, the thermal expansion is temperature dependent. Yamada discloses the CaO moisture absorbent material with particular particle size, and the thermoplastic resins with particular layer thickness as claimed and/or disclosed by applicant, as such, the thermal properties of the materials are implicitly disclosed by Yamada teachings. Particularly, given that both, applicant's disclosure and Yamada teach similar materials, it follows that one skilled in the art would reasonable expect in both cases for the desiccant material components to exhibit similar thermal properties, that is, a coefficient of thermal expansion for the CaO grains and the thermoplastic resin being of $5x10^{-6}$ to $25x10^{-6}$ and $100x10^{-6}$ to $200x10^{-6}$, respectively, for a similar operating temperature range.

Claims 1, 4, 7 and 10 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Otsuki et al. (US 6,737,176).

Regarding claim 1 and 4, Otsuki discloses a display apparatus in which display operation is carried out by controlling emission of each pixel arranged in a matrix, the apparatus comprising, an element substrate on which a luminous element is formed for each of the pixels, a sealing substrate on which a protrusion is formed in a surrounding area thereof, the protrusion

being adhered to the periphery of the element substrate so as to seal an upper space over the element substrate, and a desiccant fixed on an internal surface of the sealing substrate opposed to the element substrate so as to make the upper space located over the element substrate dry, wherein the desiccant consists of an adhesive made of a thermoplastic resin and moisture absorbent grains dispersedly mixed into the adhesive, the moisture absorbent grains are CaO grains having a grain size of 0.1 mμ to 10 mμ, wherein the thermoplastic resin is an acrylic resin or an epoxy resin. Otsuki fails to state the coefficient of thermal expansion for the CaO grains and the thermoplastic resin being of $5x10^{-6}$ to $25x10^{-6}$, and $100x10^{-6}$ to $200x10^{-6}$, respectively. However, it is understood that the expansion coefficients are specific for each material because the magnitude of the bonding forces are specific, moreover, the thermal expansion is temperature dependent. Otsuki discloses the CaO moisture absorbent material with particular particle size, and the thermoplastic resins with particular layer thickness as claimed and/or disclosed by applicant, as such, the thermal properties of the materials are implicitly disclosed by Otsuki teachings. Particularly, given that both applicant's disclosure and Otsuki teach similar materials, it follows that one skilled in the art would reasonable expect in both cases for the desiccant material components to exhibit similar thermal properties, that is, a coefficient of thermal expansion for the CaO grains and the thermoplastic resin being of $5x10^{-6}$ to $25x10^{-6}$ and $100x10^{-6}$ to $200x10^{-6}$, respectively, for a similar operating temperature range.

Regarding claim 7 and 10, Otsuki discloses a desiccant which absorbs moisture consisting of: an adhesive of resin, and moisture absorbent grains dispersedly mixed into the adhesive, wherein the moisture absorbent grains are CaO grains having a grain size of 0.1 mμ to 10 mμ, wherein the thermoplastic resin is an acrylic resin or an epoxy resin. Otsuki fails to state the coefficient of thermal expansion for the CaO grains and the thermoplastic resin being of $5x10^{-6}$ to $25x10^{-6}$, and $100x10^{-6}$ to $200x10^{-6}$, respectively. However, it is understood that the

expansion coefficients are specific for each material because the magnitude of the bonding forces are specific, moreover, the thermal expansion is temperature dependent. Otsuki discloses the CaO moisture absorbent material with particular particle size, and the thermoplastic resins with particular layer thickness as claimed and/or disclosed by applicant, as such, the thermal properties of the materials are implicitly disclosed by Otsuki teachings. Particularly, given that both, applicant's disclosure and Otsuki teach similar materials, it follows that one skilled in the art would reasonable expect in both cases for the desiccant material components to exhibit similar thermal properties, that is, a coefficient of thermal expansion for the CaO grains and the thermoplastic resin being of $5x10^{-6}$ to $25x10^{-6}$ and $100x10^{-6}$ to $200x10^{-6}$, respectively, for a similar operating temperature range.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Otsuki et al. (US 6,737,176).

Regarding claim 6, Otsuki discloses the claimed invention except for the limitation of the desiccant being formed in the shape of a spiral on a surface of the sealing substrate. In the same field of endeavor, Hishida discloses a desiccant formed in the shape of a spiral and teaches said embodiment to provide a moisture absorbent having a large surface area disposed in a minimum area (Column 2, lines 23-25). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the desiccant in the shape of a

spiral in order to obtain a moisture absorbent having a large surface area disposed in a minimum area. Further, providing the desiccant in the shape of a spiral would have involved a mere change in the shape of a component, and accordingly, it has been held to be within the level or ordinary skill in the art.

Otsuki-Hishida fail to disclose the limitation of the desiccant having a thickness of approximately 10 μm to 150 μm and a width of approximately 1000 μm to 2000 μm, Hishida discloses the desiccant having a thickness of approximately 0.2 mm and a width of 0.2 mm. However, one skilled in the art would reasonably contemplate optimization of the thickness and width of the desiccant layer as a matter of design engineering in order to maintain and enhance the moisture absorbance characteristic desired within the display while increasing the surface area of the desiccant within a minimum area. Furthermore, applicants claimed thickness and width does not solve any of the stated problems or yield any unexpected result that is not within the scope of the teaching applied. Therefore, one skilled in the art would have reasonable expected applicant's invention to perform equally well with either the width and thickness discloses by Hishida or the claimed thickness of approximately 10 μm to 150 μm and a width of approximately 1000 μm to 2000 μm, since in both situation the disclosed dimensions perform the same function of maintaining and enhancing the moisture absorbance characteristic desired within the display panel while increasing the surface area of the desiccant within a minimum area.

Response to Arguments

Applicant's arguments filed December 12, 2005 have been fully considered but they are not persuasive.

In regards to applicant's contention that the applied prior reference to Otsuki fails to set the coefficient of thermal expansion, thus does not anticipate the claimed invention, the examiner respectfully disagrees. While Otsuki fails to explicitly state the coefficient of thermal expansion for the CaO grains and the thermoplastic resin being of $5x10^{-6}$ to $25x10^{-6}$, and $100x10^{-6}$ to $200x10^{-6}$, respectively, Otsuki discloses the CaO moisture absorbent material with particular particle size, and the thermoplastic resins with particular layer thickness as claimed and/or disclosed by applicant. It is understood that the expansion coefficients are specific for each material because the magnitude of the bonding forces are specific, moreover, the thermal expansion is temperature dependent. Otsuki discloses the CaO moisture absorbent material with particular particle size, and the thermoplastic resins with particular layer thickness as claimed and/or disclosed by applicant, as such, the thermal properties of the materials are implicitly disclosed by Otsuki teachings. Particularly, given that both, applicant's disclosure and Otsuki teach the same materials and structural dimensions (particle size and layer thickness), it follows that one skilled in the art would reasonable expect in both cases for the desiccant material components to exhibit similar thermal properties, that is, a coefficient of thermal expansion for the CaO grains and the thermoplastic resin being of $5x10^{-6}$ to $25x10^{-6}$ and $100x10^{-6}$ to $200x10^{-6}$, respectively, for a similar operating temperature range.

For the reasons stated above, it is considered that the Otsuki reference reads over the claimed invention.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariceli Santiago whose telephone number is (571) 272-2464. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

3/6/06
Mariceli Santiago
Primary Examiner
Art Unit 2879